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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,922	10/19/2001	Junmyoung Song	2777-0193P	6320

2292 7590 11/12/2004

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EXAMINER

PATTERSON, MARC A

ART UNIT PAPER NUMBER

1772

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/981,922

Applicant(s)

SONG ET AL.

Examiner

Marc A Patterson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address.

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2,5,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 2,5,7 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/7/04
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### WITHDRAWN REJECTIONS

1. The 35 U.S.C. 112, first paragraph rejection of Claims 1 – 6, of record on page 2 of the previous Action, is withdrawn.

### NEW REJECTIONS

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 5 and 7 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikama et al (U.S. Patent No. 5,718,953) in view of Kuze et al (U.S. Patent No. 4,454,312).

With regard to Claims 2, 5 and 7 – 8, Shikama et al disclose a heat – shrinkable tube (column 1, lines 45 – 49) for covering a condenser (column 5, lines 58 – 60), comprising a 30% by weight polyester resin (column 3, lines 44 – 46) and 2% by weight (column 4, line 16) of a particle (silica; column 3, line 62) having a diameter of 0.5  $\mu\text{m}$  (column 4, line 2) which provides slipperiness to the tube (column 3, lines 58 – 60); the composition is made by melting (column 8, lines 50 – 51) with a particle (column 8, lines 59 – 60). Shikama et al fail to disclose a slipperiness of 300 to 800 grams – force. However, Shikama et al teach that the slipperiness is provided by the particles (column 3, lines 58 – 60). Therefore one of ordinary skill in the art would have recognized the utility of varying the amount of particles to obtain a desired

slipperiness. Therefore, slipperiness would be readily determined through routine optimization of the amount of particles by one having ordinary skill in the art depending on the desired end use of the product.

It therefore would be obvious for one of ordinary skill in the art to vary amount of particles in order to obtain a desired slipperiness, since the slipperiness would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Shikama et al..

Shikama et al also fail to disclose a composition comprising 80 to 99% weight percent of a copolymer resin comprising 1 to 15 mol % of polyethylene naphthalate and 85 to 99 mol % polyethylene terephthalate and having an intrinsic viscosity of 0.65 to 1.0 dl/g, 1 to 20% of a resin comprising polybutylene terephthalate, 10 – 30% by weight of a pigment, and 0.01 to 1.1% by weight of a metal salt of benzoic acid.

Kuze et al teach a polyester composition comprising 100% by weight of a copolymer of polyethylene terephthalate, polyethylene naphthalate and polybutylene terephthalate (copolymer comprising repeat units of alkylene terephthalates; column 2, lines 31 – 35) having an intrinsic viscosity of 0.638 dl/g (column 8, lines 44 – 49), a pigment (titanium dioxide; column 1, lines 24 – 27) and a metal salt of benzoic acid (potassium benzoate; column 3, line 57) for the purpose of obtaining a composition having excellent slip properties (column 1, lines 5 – 8). Therefore, one of ordinary skill in the art would have recognized the advantage of providing for the copolymer of polyethylene terephthalate, polyethylene naphthalate and polybutylene terephthalate and a pigment and metal salt of benzoic acid of Kuze et al in Shikama et al, which is a polyester composition, depending on the desired slip properties of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for 100% by weight of a copolymer of polyethylene terephthalate, polyethylene naphthalate and polybutylene terephthalate having an intrinsic viscosity of 0.638 dl/g, a pigment and a metal salt of benzoic acid in Shikama et al in order to obtaining a composition having excellent slip properties as taught by Kuze et al.

Kuze et al fail to teach a composition comprising 1 to 15 mol % polyethylene naphthalate, and 85 mol % polyethylene terephthalate, and 1% polybutylene terephthalate, and an intrinsic viscosity of 0.65 to 1.0 dl/g, 10 – 30% pigment by weight and 0.01 to 1.1% by weight of a metal salt of benzoic acid. However, Kuze et al teach a copolymer comprising polyethylene naphthalate, polyethylene terephthalate, and polybutylene terephthalate (column 2, lines 31 – 35), an intrinsic viscosity of 0.638 dl/g (column 8, lines 34 – 49) and at least benzoic acid (the composition comprises benzoic acid; column 3, line 57) and teach that the polyester and resin is selected to obtain an excellent slipping property (column 2, lines 23 – 27) and that the amount of pigment is varied over a wide range depending on the desired surface properties of the end product (column 5, lines 11 – 22). Therefore, one of ordinary skill in the art would have recognized the utility of varying the amounts of components in the copolymer, the intrinsic viscosity and the amount of metal salt and pigment to obtain a desired slipping property. Therefore, the slipping property would be readily determined through routine optimization of the amounts of components in the copolymer, the intrinsic viscosity and the amount of metal salt and pigment by one having ordinary skill in the art depending on the desired end use of the product.

It therefore would be obvious for one of ordinary skill in the art to vary the amounts of components in the copolymer, the intrinsic viscosity and the amount of metal salt and pigment in

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order to obtain a slipping property, since the slipping property would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Kuze et al.

#### ANSWERS TO APPLICANT'S ARGUMENTS

4. Applicant's arguments regarding the 35 U.S.C. 103(a) rejection of Claim 2 as being unpatentable over Shikama et al (U.S. Patent No. 5,718,953) and 35 U.S.C. 103(a) rejection of Claim 5 as being unpatentable over Shikama et al. (U.S. Patent No. 5,718,953) in view of Kuze et al (U.S. Patent No. 4,454,312), of record in the previous Action, have been considered but have not been found to be persuasive for the reasons set forth below.

Applicant argues, on page 6 of the remarks dated August 26, 2004, that the rejection is improper because Shikama et al comprises both polyester and polyphenylene sulfide, rather than only polyester.

However, the claimed invention, which is directed to a tube comprising polyester, does not exclude a tube which comprises polyester and polyphenylene sulfide as disclosed by Shikama et al.

Applicant also argues, on page 6, that there is no recognition in Shikama et al of the importance of the claimed intrinsic viscosity, size of external particles and content of external particles.

However, as discussed above, the claimed intrinsic viscosity, size of external particles and content of external particles is taught by Kuze et al and would have been obvious for one of ordinary skill in the art to have provided for in Shikama et al.

Applicant also argues, on page 6, that although Shikama et al disclose a particle diameter of 0.01 – 10  $\mu\text{m}$ , Applicant's appear to teach away from diameters less than 4  $\mu\text{m}$ .

However, because Shikama et al disclose a particle diameter of 0.01 – 10  $\mu\text{m}$ , Shikama et al necessarily includes the entire range, including diameters less than 4  $\mu\text{m}$ , which is the claimed particle diameter.

Applicant also argues, on page 7, that the polymer disclosed by Kuze et al is a three – component polymer, rather than a two – component polymer as claimed, and that three component polymers are inferior in crystallization speed.

However, the claimed invention, which is defined using 'comprising' language, does not exclude the third component, polybutylene terephthalate, of the polymer taught by Kuze et al.

Applicant also argues, on page 8, that would not be obvious for one of ordinary skill in the art to vary amounts of components and viscosity to obtain a desired slipping property.

However, as stated above, Kuze et al teach that the polyester and resin is selected to obtain an excellent slipping property (column 2, lines 23 – 27), therefore the components and viscosity of a polyester blend is selected to obtain an excellent slipping property.

Applicant also argues, on page 8, that Kuze et al does not teach external particles or alkali metal / alkali earth metals.

However, Shikama et al disclose external particles, as discussed above, and alkali metal / alkali earth metals are not claimed.

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5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (571) 272 – 1497. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571) 272 – 1498. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

*Marc Patterson*  
Art Unit 1772

*[Signature]*  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772

*11/9/04*